



COOLING & HEATING GROUP XI

GENERAL

COOLING SYSTEM

The cooling system in the Checker is of the pressure type. This means that the water is under pressure when operating with a pressure cap on the radiator. The pressure cap is designed with a spring pressure of approximately four pounds to hold the sealing portion of the cap tight against the top of the filler neck. Under this pressure, created by the cap, water is prevented from boiling at its normal boiling point.

As you know, water boils at 212 degrees Fahrenheit at normal atmospheric pressure. You also know that under low atmospheric pressures, as found in high altitudes, water will boil at less than 212 degrees. On the other hand, if more pressure is applied, water will boil at higher than 212 degrees temperature. This is the principle used in a pressure cooling system. The cooling system is sealed by the pressure cap, causing pressure to be developed, raising the boiling point of the water.

The boiling point of the water in the system is increased 3 degrees for every pound increase of pressure. The Checker cooling system has a four pound pressure cap, thus, the boiling point of the water is 224 degrees.

We have learned, from records of innumerable tests, that an engine operates more efficiently at high temperatures. Gasoline economy is better and sludge formation is minimized. The Checker can be equipped, as optional equipment, with a thermostatically operated shutter, which is used to help maintain these higher temperatures for winter driving, and to furnish additional heat to the car heater in extremely cold outside temperatures. The thermostat is set to start opening at 170 degrees. Depending on outside temperatures, the normal water temperatures will be from 170 to 200 degrees and with a pressure cap, temperatures can go over 212 degrees without affecting the efficiency of the engine or without any danger of overheating.

Real overheating will be indicated by the continued loss of water boiling out of the radiator, and unless this happens the system is working in a normal and satisfactory manner. However, if the radiator is over filled, some water will be lost through the overflow pipe when the engine is warmed up the first time. This loss, however, will not continue and additional water should not be added.

The radiator cap should not be removed when the engine is hot, as the removal will release the pressure in the cooling system and cause the hot water to overflow the filler neck. When the cap is removed, the pressure is lost.

Be guided, therefore, by the heat indicator. As long as it stays within the operating range, marked on the dial, the cooling system is functioning properly; and you should instruct filling station attendants to leave the radiator cap alone. The cooling system then will retain its maximum temperature control and the engine will continue to operate at its greatest efficiency.

HEATING SYSTEM

The Checker is equipped with a centrally located heater on dash. All models have defrosters as part of this heater.

COOLING AND HEATING

GROUP 11

PARTS LIST

| No. Req'd. | Part Number | Description |
|---------------|----------------|-------------|
|---------------|----------------|-------------|

RADIATOR

| | | |
|---|--------|--|
| 1 | 81056 | RADIATOR ASSEMBLY STD. |
| 1 | 81057 | RADIATOR ASSEMBLY—Tropical (Special) |
| 1 | 62588 | CORE—Radiator |
| 1 | 62595 | CORE—Radiator Tropical |
| 1 | 62589 | TANK ASSEMBLY—Top |
| 1 | 62593 | CONNECTION—Top Hose |
| 1 | 62581 | NECK—Filler |
| 1 | 62594 | TUBE—Overflow |
| 1 | 62590 | TANK ASSEMBLY—Bottom (Without Outlet) |
| 1 | 62583 | CONNECTION—Bottom Hose |
| 1 | 62592 | STRIP ASSEMBLY—R. H. Side Bolt |
| 1 | 62591 | STRIP ASSEMBLY—L. H. Side Bolt |
| 1 | 80640 | CAP & CHAIN ASSEMBLY—Radiator |
| 1 | 70781 | CAP—Radiator |
| 1 | 80641 | CHAIN ASSEMBLY |
| 1 | 80642 | CLAMP—Radiator Filler Neck Chain |
| 1 | 129028 | SCREW—Radiator Filler Neck Chain Clamp Rd. Hd. |
| 1 | 138473 | WASHER—Radiator Filler Neck Chain Clamp Screw Lock |
| 1 | 134532 | NUT—Radiator Filler Neck Chain Clamp Screw |
| 2 | 80088 | HOSE—Radiator Outlet |
| 1 | 80697 | TUBE—Radiator Outlet |
| 1 | 81011 | HOSE—Radiator Inlet |
| 1 | 81076 | HOSE—Radiator Inlet (With Winterfront) |
| 6 | 24690 | CLAMP—Hose |
| 1 | 23305 | COCK—Radiator—1/4 I. P. Drain |
| 6 | 119860 | BOLT—Radiator Mounting Hex Hd. |
| 6 | 446355 | WASHER—Radiator Mounting Bolt Plain |
| 6 | 115109 | WASHER—Radiator Mounting Bolt Lock |
| 6 | 118613 | NUT—Radiator Mounting Bolt Hex (For Service Only) |

WINTERFRONT (SPECIAL EQUIPMENT)

| | | |
|---|--------|---|
| 1 | 81075 | WINTERFRONT ASSEMBLY |
| 1 | 62574 | CABLE & FERRULE ASSEMBLY |
| 1 | 62572 | CASING—Flexible |
| 1 | 62573 | LOOM—Auto |
| 2 | 62570 | WASHER—Return Spring Post |
| 1 | 107761 | PIN—Return Spring Post Cotter |
| 1 | 31335 | SPRING—Return |
| 1 | 31338 | CLAMP—Flexible Casing |
| 1 | 113956 | SCREW—Flexible Casing Clamp Rd. Hd. |
| 1 | 114501 | NUT—Flexible Casing Clamp Screw |
| 1 | 31333 | BRACKET—Cover |
| 1 | 31340 | FITTING—Male |
| 1 | 115093 | WASHER—Male Fitting Lock |
| 1 | 114942 | NUT—Male Fitting Hex |
| 1 | 31342 | COLLET |
| 1 | 31343 | NUT—Collet |
| 6 | 123320 | BOLT—Winterfront to Radiator Mounting Hex Hd. |
| 6 | 626015 | FASTENER—U Type |

WINTERFRONT CONTROLS (SPECIAL EQUIPMENT)

| | | |
|---|-------|--|
| 1 | 24758 | THERMOSTAT ASSEMBLY—(For use with Winterfront) |
| 1 | 31332 | THERMOSTAT UNIT |
| 1 | 21042 | GASKET—Thermostat |
| 1 | 31330 | YOKE |
| 1 | 31331 | ARM & SWIVEL ASSEMBLY—Crank |

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PARTS LIST

Req'd. Number
No. Part

Description

WINTERFRONT CONTROLS (CONT.)

| | | |
|---|--------|--|
| 1 | 21046 | PIN—Arm and Swivel Assembly to Yoke |
| 1 | 20590 | PIN—Arm and Swivel Assembly to Thermostat Cover |
| 2 | 112526 | PIN—Cotter |
| 4 | 132836 | SCREW—Cover Fastening Rd. Hd. (For use with Winterfront) |
| 2 | 132842 | SCREW—Cover Fastening Rd. Hd. (For use with Winterfront) |
| 6 | 115707 | WASHER—Cover Fastening Screw Lock (For use with Winterfront) |
| 2 | 120361 | NUT—Cover Fastening Screw Hex (For use with Winterfront) |

CYLINDER WATER CONNECTIONS

| | | |
|---|--------|---|
| 1 | 80139 | OUTLET—Engine Water (For use with Winterfront) |
| 2 | 80202 | STUD—Water Outlet (For use with Winterfront) |
| 1 | 80362 | ELBOW—Engine Water Outlet (For use without Winterfront) |
| 2 | 62101 | STUD—Water Outlet Elbow (For use without Winterfront) |
| 2 | 116120 | WASHER—Water Outlet Stud Lock |
| 2 | 115729 | NUT—Water Outlet Stud Hex |
| 2 | 80140 | GASKET—Water Outlet |
| 1 | 80141 | PLATE—Water Outlet Reducing |
| 1 | 40121 | DOOR—Water Outlet Check Valve |
| 1 | 40122 | PIN—Valve Door |
| 1 | 80374 | GASKET—Elbow to Head |
| 1 | 40042 | COCK—Cylinder Water Drain |
| 1 | 80375 | THERMOSTAT—Engine |
| 1 | 80373 | RING—Thermostat Adapter |

HEATER CONTROL AND HOSES

| | | |
|---|--------|---|
| 1 | 80564 | HOSE—Heater Engine Tube to Water Pump |
| 1 | 81270 | HOSE—Heater to Engine Tube |
| 1 | 81271 | HOSE—Heater to Engine Valve |
| 1 | 81273 | TUBE—Heater Engine |
| 1 | 81272 | VALVE ASSEMBLY—Heater Shut-Off |
| 6 | 40095 | CLAMP ASSEMBLY—Heater Hose |
| 2 | 80563 | CLIP—Heater Engine Tube |
| 1 | 142269 | BUSHING—Valve to Cylinder Head Reducing |
| 1 | 80567 | NIPPLE—Water Pump Heater |

FAN AND PULLEY

| | | |
|---|--------|-------------------------------------|
| 1 | 62094 | PULLEY ASSEMBLY—Fan |
| 1 | 80146 | BELT—Fan and Generator |
| 1 | 80047 | BLADE ASSEMBLY—Fan |
| 4 | 115703 | BOLT—Fan Blade Mounting Hex Hd. |
| 4 | 116120 | WASHER—Fan Blade Mounting Bolt Lock |